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What determines wage levels during the business cycle?

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Economists have long been interested in how wage levels are determined during the course of the business cycle. In particular, they look at how macroeconomic factors such as government spending, aggregate productivity, and Gross Domestic Product influence the price of labor at the microeconomic level. As the economy expands and contracts, are wage levels primarily determined by the current state of the economy—that is, what economists call "contemporaneous conditions"?

Or are there lasting effects from the boom-and-bust cycle that make wage levels more dependent on historical factors? Over the last several decades, economists have assembled a large body of theoretical and empirical evidence supporting the former view, and it has become the standard theoretical approach in contemporary quantitative macroeconomics.

Although there is disagreement about the particulars—some studies stress the effect of substantive productivity changes, known as "productivity shocks," on wage levels and others emphasize the role of changes in government spending—economists generally agree that the present condition of the economy is the primary factor affecting wage levels. But in recent years a number of influential studies have challenged the prevailing view by presenting evidence that wage levels are in fact "history dependent," meaning that aggregate labor market conditions continue to influence workers' wage levels long after the economy has moved from one phase of the business cycle to the next. These two competing theories have very different implications for understanding how wage levels are determined in a macroeconomy.

In a recent study called "Job selection and wages over the business cycle" (*American Economic Review*, April 2013, pp. 771–803), economists Marcus Hagedorn and Iourii Manovskii examine this topic from a new perspective and provide an alternative to the history-dependent thesis. Their study argues that wage levels are mostly determined by current economic conditions in combination with what they call "idiosyncratic match qualities"—the individual characteristics of workers and firms and the role they play in the hiring or "matching" process. The authors explain that these "unmeasured match productivities" have not been accounted for in the studies that stress historical factors, leading those studies to reach erroneous conclusions. Hagedorn and Iourii develop a model that accounts for what they view as the key missing variable in the history-dependent studies. They provide a theoretical explanation for the importance of accounting for matching qualities and present empirical evidence in support of their findings by applying their model to data from the National Longitudinal Survey of Youth and the Panel Study of Income Dynamics.

Hagedorn and Iourii's model considers a job search among people who are currently employed and assumes that wage levels depend only on current aggregate labor market conditions and idiosyncratic productivities. The Hagedorn-Iourii model generates many of the same features that previous studies have interpreted as evidence that historical factors are the primary determinant of wage levels. For example, a number of studies present evidence that people who enter the labor market during a recession receive lower wages than those who enter during an expansion and that these wage disparities persist over time. Other studies suggest that wages depend less on the current unemployment rate than on the lowest unemployment rate since the job began. But when Hagedorn and Iourii construct a

variable to account for matching productivities, they are able to explain these same factors in terms of current economic conditions.

The main innovation of this study is the method the authors use to measure the expected job match quality, which they argue can be approximated by the expected number of job offers received.

Although the number of job offers is not directly measurable, Hagedorn and Iourii show that it is roughly equal to what they call "the sum of labor market tightness"—that is, the ratio of the aggregate stock of vacancies to the unemployment rate. When the authors include this measure of the expected number of offers in their regression analysis to control for unobserved idiosyncratic productivity, they find that factors such as the lowest unemployment rate since the start of a job or the present unemployment rate when a job begins lose their significance in terms of predicting wages.